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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/657,661

09/08/2003

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EXAMINER

CHEA, THORL

ART UNIT

PAPER NUMBER

1752

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/657,661

Applicant(s)

KASHIWAGI ET AL.

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on February 5, 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is responsive to the communication on February 5, 2007; Claims 1-4, 6, 10-13 are pending in this instant application; claims 5, 7-9 have been canceled.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-4, 6, 10, 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicants argue that the support for the newly added language "wherein a ratio of behenic acid to aliphatic carboxylic acid used to make said silver salt of the aliphatic carboxylic acid is 54 mol % or more, wherein said silver salt of the aliphatic carboxylic acid has a melting point of 50°C or more".

The applicants state that "specifically, this ratio is recited as 34 % or more. Support for the fact that behenic acid is used to make the aliphatic carboxylic acid is found in the paragraph bridging pages 29 and 30 as well as the first paragraph on page 30. Table 1 on page 98 provides support for the limitation of 54% or more since that Table clearly teaches that 54% or more of behenic acid is used to make the silver salt.

Upon reviewing the pages pointed out by the applicants such languages are not found. There is nowhere in the application that provide the support for ratio of 34 % or more. Table 1 show the

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mol % of behenic acid of 54 mole % of melting point of 58 °C; 65 mol % of melting point of 62 °C; 85 mole % of melting point of 75 °C; and 95 mole % of melting point of 75 °C. Last paragraph of page 29 generically discloses the light-insensitive silver salt of an organic acid having 10 to 30 carbon atoms; page 30 recites the exemplified silver salt of long chain aliphatic carboxylic acid including silver salt of gallic acid, citric acid, behenic acid, stearic acid, arachidic acid, palmitic acid and lauric acid, and of these, silver behenate, silver arachidate and silver stearate are preferred. The other part of the component of the aliphatic carboxylic acids presented in Table 1 are arachidic acid, stearic acid and palmitic acid.

The specification as a whole may generically discloses the light-insensitive silver salt of an aliphatic carboxylic acid or the use of at least two kinds of silver salt of aliphatic carboxylic acids to enhance developability and to form image with density and high contrast, but does not discloses the use 54 mole % of the behenic acid in combination with the aliphatic carboxylic acid of lower carbon atoms to produce a silver salt of the aliphatic acid that has a melting point of 50 °C or more. The silver salt of an aliphatic carboxylic acid that has a melting point of 50 °C or more is a silver salt of an aliphatic carboxylic acid having higher number of carbon atom content such as arachidic acid, stearic acid and palmitic acid such as exemplified in Table 1. The scope of the claims encompasses the scope of silver salt of an aliphatic carboxylic acid having 54 mole of silver behenic acid so long as the melting point thereof is 50 °C or more. This concept has not been disclosed in the specification as originally filed. Therefore, the language as amended raises the issue of new matter.

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 10, 12 are rejected under 35 U.S.C. 103(a) as obvious over the combination of Arai et al (US Patent No. 6,090,538) and Takada et al (US 6,235,460). See examples 3, columns 53-54, wherein the silver iodobromide grains is prepared in the presence of 4-hydroxy-6-methyl-1,3,3a, 7-tetrazaidene and the preparation of organic fatty acid silver emulsion such as silver salt of behenic acid and the reducing agent of formula (R-I) in column 60, claim 7 and column 36, Table 1. The 4-hydroxy-6-methyl-1,3,3a, 7-tetrazaidene is considered as electron trapping electron used in the applicants' disclosure on page 85, silver halide emulsion 3. Arai et al disclose the material having composition as claimed except does not show the requirement $S_B/S_A \leq 0.2$ presented in the claimed invention. Takada et al in column 12, lines 1-67 to column 13, lines 1-40 discloses the silver halide grains which are subjected to chalcogen sensitization such a sulfur compound, noble metal complex in combination with organic compound such as 4-hydroxy-1,3,3a, 7-tetrazaidene which can be added before, during, after grain formation, at the stage of washing, at the stage of dispersion after washing, before during or after chemical sensitization or before coating. See 4-hydroxy-1, 3,3a,7-tetrazaidene compound in column 13, lines 29-30. Arai et al disclose the use of the same compound which 4-hydroxy-1, 3,3a,7-tetrazaidene compound used in the applicants' declaration submitted on April 10, 2006 as organic dopant during the preparation of silver halide emulsion, but fails to disclose whether the compound is added during nucleus formation or during grains growth.

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However, Takada et al discloses that the compound can be added any time such as before, during, after grain formation, at the stage of washing, at the stage of dispersion after washing, before during or after chemical sensitization or before coating with an expectation of achieving similar results. It is also disclosed in column 13 lines 35-30, that in addition to antifogging or stabilizing effects, these compounds can also be employed for the purpose of controlling crystal habit during grain growth, restraining grain growth or reducing grain solubility. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to add the compound taught in Takada et al during the state of silver halide grain growth to control the grain growth and at the same time provide a photothermographic material with antifogging or stabilizing effects, and thereby provide a material as claimed. The limitation such "wherein the photothermographic material further comprises a compound represented by the following formula (I), and the photothermographic material meets the following requirement:

$S_B/S_A \leq 0.2$, wherein S_A represents a sensitivity obtained when exposed to white light (4874K) for 30 sec. through an optical wedge, and then developed at 110 °C for 15 sec., and S_B represents a sensitivity obtained when subjected to a heat treatment at 110 °C for 15 sec., and exposed to white light (4874K) for 30 sec. through an optical wedge, and then developed at 110 °C for 15 sec." is inherent to the material obtained by the combination of Arai et al (US Patent No. 6,090,538) and Takada et al (US 6,235,460).

5. Claims 11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of combination of Arai et al and Takada et al (US 6,235,460) as applied to claims

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1-4, 6, 10, 12 above, and further in view of Maeda et al (US 2002/0042031 A1).. Maeda et al discloses silver salt of fatty acid having grains size of 0.05 to 1.5 microns on page 27, claim 13, and chemical sensitizer on page 11, [0070] to [0093]. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the silver salt of fatty acid having grains size disclosed in Maeda et al in the material of Arai et al with an expectation of achieving a material exhibiting enhanced sensitivity and reduced fogging.

Response to Arguments

6. Applicant's arguments filed January 5, 2007 have been fully considered but they are not persuasive of the reason set forth the rejection set forth above and the reason provided in the office action dated November 28, 2006. In the response to the office action on November 28, 2006, the applicants argue that : Takada had been cited to teach the addition of tetrazaindene at various stages to include before, during or after grain formation, at or after washing, before, during or after chemical sensitization and before coating, see column 13, lines 33-36. The Examiner can clearly recognize such teaching does not direct one to any specific point in time within which to add the tetrazaindene but, rather, teaches that all are equivalent. The applicants also rely on the Declaration by Ms. Soc Man Ho Kimura which shows the results in Table 7, which is attached to Ms. Kimura's Declaration, that Sample 7A had an Sb/Sa ratio outside the claims and inferior storage stability and image lasting quality compared to the present Invention, the present Invention being Sample 7B.

The argument is not persuasive. The showing in the Declaration is not consistent with the specification disclosure.

The specification disclosure discloses that in the present invention, light-sensitive silver halide grains each internally contains electron dopant. Thus, it is preferred to cause an electron trapped dopant to be occluded in the interior of silver halide grains, resulting in enhanced sensitivity and improved storability. The specification disclosure show no preference between the organic or inorganic dopant so long as it have the ability to trap the electron within the silver halide grain. The organic dopants and the inorganic dopant such as metal complex are equivalent. The specification disclosure does not disclose the use of a 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene during silver nuclei formation, but after silver nuclei formation. See page 85 of the specification disclosure, emulsion 3 and the use thereof in Table 1 on page 98. This silver halide emulsion contains metal dopant inside the grain and followed by the use of 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene such as the silver halide of Arai et al in column 54, silver halide B wherein the hexacyanoferrate (III) and hexachloroiridium (III) complex salt where added at the same time with the addition of silver nitrate. Arai et al therefore added hexacyanoferrate (III) and hexachloroiridium (III) complex salt during silver nuclei formation and followed by the addition of 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene. The results in Table 1 on page 98. samples 114-116 contains both metal dopants and the 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene but fails to have a ratio S_B/S_A if the compound of formula (1-1) is not included therein. Therefore, the ratio of S_B/S_A as claimed cannot be achieved in the absence of the compound of formula (I), and the metal dopant containing inside of the grains.

The Declaration states that the material taught in Arai et al does not have the ratio of S_B/S_A claimed in the present invention due to failing to disclose the adding of 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene during the silver halide nuclei formation, but Arai added the dopants

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during the silver nuclei formation which provide electron trapping inside the silver halide grain, and such process provide good results such as shown in Table 1 on page 98 of the specification disclosure. Supposedly, Arai et al fails to use the organic compound as electron trapping electron, but the metal dopant. This use is not necessarily mean that it would have been found unobvious to the worker of ordinary skill in the art at the time the invention was made since the metal dopant and the organic compound dopant have been known in the art such as taught in Takada et al. These dopants would have expected to work similarly. See Takada et al in column 12. Therefore, the worker of ordinary skill in the art would have use an organic compound or a metal compound during the silver nuclei formation such as exemplified in Arai et al with an expectation of achieving at least similar results.

The results shown in the Declaration on February 5, 2005 fails to overcome the prima facie case of obviousness. The Declaration discloses the use of 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene as electron dopant. However, the specification as a whole fails to state whether the 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene is an organic dopant. The 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene has been known in the art as antifoggant or stabilizers such as shown in the applied prior art cited of interest such as Fujiwara et al (US 6,413,705) and Yanagisawa et al (US 2002/0028414) wherein Fujiwara et al (US 6,413,705) discloses in column 32, lines 58-67 and column 33, lines 1-2 that the 4-hydroxy-6-methyl-1, 3,3a,7-tetrazaiene compound is an antifoggant and Yanagisawa et al (US 2002/0028414) discloses 4-hydroxy-6-methyl-1, 3,3a,7-tetrazaiene compound as silver halide stabilizer on page 41, [0287]. The Declaration appears to be not related to the organic dopant compound. Moreover, the organic dopant within the meaning of the claimed invention is so broad, and the use of a single compound such as 4-

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hydroxy-6-methyl-1, 3,3a,7-tetrazaiene compound is not sufficient to determine the unexpected results of the claimed invention. The specification as originally filed fails to recognize the use of 4-hydroxy-6-methyl-1, 3,3a,7-tetrazaiene compound during the nucleation formation or grain growth provide such results. The Declaration therefore lacks probative value.

7. Cited of interest: Yanagisawa et al (US 2002/0028414) and Fujiwara et al (US 6,413,705).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tchea *tc*
2007-04-17


Thorl Chea
Primary Examiner
Art Unit 1752